

We venture to think, too, that the work suffers to some extent by the mode in which its parts have been put together. It is necessarily somewhat mosaic in character, and there is a certain want of harmony and continuity of arrangement. No doubt this is due to the difficulty of dealing with so large a body of contributors, all of whom are working independently. But these, after all, are minor blemishes, and do not seriously detract from the very great value of the compilation. We heartily congratulate Dr. Oliver and his colleagues on the production of a work which will unquestionably take high rank in the literature of sanitary reform.

T. E. THORPE.

THE NEW INTERNATIONAL CATALOGUE.

International Catalogue of Scientific Literature. First Annual Issue. D. Chemistry, Part i. Pp. xiv + 468. (1902.) Price 21s.

THIS is the second instalment of the work of the International Catalogue Bureau, the first (part i. of Botany) having been reviewed in our issue of July 3 (p. 217). In a notice on p. xiv. it is explained that in consequence of the difficulties attending the complete organisation of the work of the regional bureaux some delay has arisen, and it is hoped that the second part of the volume will be published in a few months. In starting a colossal work such as this "International Catalogue," delay was inevitable, and it is to be hoped that when the different bureaux are in working order the volumes will be published more closely to the period to which they refer. On the title-page it is stated that the MS. for this volume was completed in January, 1902, so we presume that both parts i. and ii. will deal with the year 1901 only.

It is reported that although the seventeen annual volumes which constitute the "Catalogue" will, as a rule, contain the work of twelve months, yet they will not all refer to one calendar year; probably it is impossible to avoid this arrangement so as to maintain the work of the Central Bureau at a uniform rate, but it would certainly be convenient to scientific workers if, for each science, all the papers of one calendar year could be collected into one volume. No doubt the title-page of each volume will indicate the period over which the papers indexed extend, but the annual arrangement, if practicable, would appear to be much more convenient.

The authors' catalogue is contained in 111 pages with 2455 entries; in this the authors' surnames are printed in Clarendon type with the Christian names in Roman; when initials only are given in the original paper, the remainder of the name is placed in square brackets; when a paper is by more than one author, only the name of the first is in thick type. The complete title is given, usually in the language in which the paper is written. In the case of languages other than English, French, German and Italian, a translation of the title in one of these four languages follows the original; in some instances, however, translations only are given, the names of the original languages being placed in brackets. Then follow the abbreviated titles of the periodicals, with the complete reference to volume, year and pages of beginning and ending of the paper, the number of the pages being in

parentheses. The registration numbers are placed in square brackets, and when the papers deal with other sciences in addition to chemistry, the letters and registration numbers of these sciences are included. The papers are numbered consecutively, these numbers concluding the entries. At the commencement of the volume, the schedule of chemistry, with registration numbers, is printed in English, French, German and Italian; and at the end there is a list of the periodicals with their full titles and the abbreviations used in the "Catalogue."

The subject catalogue occupies 283 pages, and is arranged in the order of the registration numbers. At the top of each page the registration number is given in thick type and is easily seen. Each division is marked with the registration number and the corresponding subject as a heading. The numbers are here also printed in thick type and the subject in Roman capitals, but they do not catch the eye so well as could be wished; the subsidiary titles are in Clarendon with capital initials, and are more easily seen than the heading of the division; thus on p. 195 the heading "Zinc Oxide" is very visible, whereas the heading "Zinc" at the commencement of the division is not so clearly shown.

In the subject catalogue the entries are, as a rule, reprints of the corresponding entries of the authors' catalogue, commencing with the authors' names in Clarendon and, if the papers belong to more than one division, concluding with the registration numbers other than those of the division under which the entries are made. The entries are repeated under each registration number. As in a subject catalogue the authors' names are not of the first importance, it would be better, if it were possible, to give prominence to the subject. The title of a paper does not always indicate its contents, and we are glad to see that in many of the papers from English serials a title is given in square brackets which shows much more effectually the contents of the papers than the original heading; thus in the authors' catalogue occurs the following entry:—"Frankland, Percy Faraday and Farmer, Robert Crosbie. Liquid Nitrogen Peroxide as a Solvent. London, *J. Chem. Soc.*, 79, 1901 (1356-1373) . . . [0490 7100 7250]" In the subject catalogue under "0490 Nitrogen," subdivision "Nitrogen Oxides," the same entry occurs, with the registration numbers [7100 7250]. Under "7100 Mass Properties," subdivision "Molecular Weights," after the names of the authors there follows "[Molecular weight determinations in liquid nitrogen peroxide by the ebullioscopic method]," with the registration numbers [0490 7250]. Under "7250 Electrical and Magnetic Properties," subdivision "Conductivity," we find the names followed by "[Conductivity of solutions in liquid nitrogen peroxide]," with the numbers [0490 7100]. It will be seen that the last two subjects cannot be inferred from the title of the paper, and there must be many other cases of the same kind. The subject catalogue is much increased in value by this indication of the contents of the papers, for which we are indebted to the activity of the English Bureau, or perhaps more definitely to that of Mr. Ernest Goulding, the referee for this volume. It would be a great boon if the other regional bureaux could be induced to give this partial analysis of the papers. It may be replied that the fact of the reference being placed under

certain subdivisions would sufficiently indicate the contents of the paper, and in the case above cited this is partially true; but take the paper numbered 738 and compare its title with those under the various sections (they are too long to quote), and the value of the additional titles will be at once appreciated.

Of recent years our knowledge of organic chemistry has increased so rapidly that it might be difficult to know under which registration number to look for some of the organic compounds, and chemists will be thankful to the Central Bureau for giving a list of organic bodies and their registration numbers extending over nearly sixteen pages in double columns and containing some 1800 references.

It may be thought that the mode of using the registration numbers would be very difficult to acquire, but it is surprising how rapidly one becomes accustomed to their employment after a little practice. It cannot be said that the schedules as they now stand are perfect, but when they are revised in 1905 many emendations will doubtless be made.

We must be thankful to the Central Bureau for the care and accuracy with which this volume has been compiled, and we must congratulate chemists on having another instrument of research at their disposal.

HERBERT MCLEOD.

ANOTHER THEORY OF SEX.

Qu'est-ce qui détermine le Sexe? Par le Docteur A. Van Lint, Médecin Assistant à l'Hôpital Saint-Pierre, à Bruxelles. Pp. 77. (Paris: Baillière et Fils, 1902.)

DR. A. VAN LINT has convinced himself of the validity of a somewhat extraordinary new theory as to the determination of sex, which is in some measure a rejuvenescence of Starkweather's. If it is true, it should give pause to virile fathers who wish to have sons, for unless they can secure still more vigorous mates they are sure to have daughters only. The theory is, that the offspring follow the sex of the weaker parent, though, as we read on, this turns out to mean the parent whose available germ-cells are relatively less vigorous at the time of fertilisation. But an attempt to estimate the relative vigour of germ-cells leads us into the region of the unverifiable.

To understand the author aright we must note that he does not believe in the concept of the germ-plasm ("pour nous, les cellules génitales se développent tout entières aux dépens des cellules somatiques," p. 34), and that he postulates the origin of the unisexual organism from primitive hermaphroditism, a tendency to which always persists in more or less subtle guise. We cannot within our limits argue about these postulates, but we cannot agree with either. It is very interesting to compare van Lint's views with those stated by Dr. John Beard in his paper on the determination of sex, also published this year.

Van Lint's new theory is a coordination of five hypotheses, which he expounds in a lucid and suggestive manner:—(1) The ovum and the spermatozoon are antithetic, expressing opposite extremes of cellular differentiation, and perhaps analogous to right-handed and

left-handed crystals of the same stuff. (2) There is also a somatic antithesis between the masculine body and the feminine body, often conspicuous in the so-called secondary sex-characters, often inconspicuously expressed in minute contrasts which saturate the whole soma. (3) Again, there is an antithesis between the character of the germ-cells borne by an individual and the character of the body of that individual; they are complementary expressions of the primitive hermaphroditic unity of the organism; indeed, the characters of the sex suppressed in the development of the unisexual gonads are expressed, as it were, in pervasive influence on the soma. (4) So strong is this third antithesis that the male's somatic cells—which the author in a question-begging term calls "parovules"—may be regarded as sexually equivalent to ova; while the female's somatic cells—which the author in another question-begging term calls "paraspermatozoides"—may be regarded as sexually equivalent to spermatozoa. This seems an extravagant and unwarranted hypothesis, and we are quite unconvinced by the facts as to effects of castration, &c., adduced in support of it. But to continue. (5) The properties of the "sexualised" body react on the properties of the germ-cells, in embryonic as well as in adult life, and this in such a definite way that they determine the sexual bias, or the sex of the offspring into which the germ-cells will develop. In short, the sex of the offspring depends on the relative bodily vigour of the parents.

Thus, if a relatively feeble ovum be fertilised by a relatively vigorous spermatozoon, the spermatozoon's qualities will be dominant; the embryo will therefore have (by hypothesis) a masculine or "paraspermatozoid" body, and to balance this the gonads will be female. One naturally wishes to know what the relative vigour of a cell means, and this is discussed in chapter v.; one also wishes to know how the vital force of a parent is measured, and chapter vi. gives the six heads of a complete medical examination. We are relieved to find, however, that the certain sign that a man is more vigorous than his wife is his having a daughter. "Le sexe de l'enfant tranchera la question." Could there be a more conclusive criterion?

In the seventh chapter it is shown that the author's theory fits in well with the phenomena of "crossed inheritance." The son is the result of a more vigorous ovum fertilised by a less vigorous spermatozoon; the somatic cells must balance the gonads, therefore they must be feminine, and, of course, the boy is the image of his mother. Could anything be simpler?

In the eighth chapter the author seeks to show with great ingenuity that the available statistical and experimental results on this difficult subject may be harmonised with his views, and concludes by showing that the so-called auto-regulation of the proportions of the sexes is also explicable on his theory, according to which it is always the more feeble that Nature insists on replacing. If we had space at our disposal we should be delighted to disagree with the ingenuous author in regard to the detailed facts, but it would be of little avail since we cannot admit his postulates. The moral of the book seems good—that the strong man who wishes to have sons must find a still stronger mate; but it also follows, unfortunately, that the weak woman who does not wish